

**Meeting of the Central Valley Flood Protection Board
August 26, 2010
Staff Report – Encroachment Permit
Aerojet-General Corporation
Groundwater Extraction and Treatment Facility, Sacramento County**

1.0 – ITEM

To consider approval of Permit No. 18483 (Attachment B)

2.0 – APPLICANT

Aerojet-General Corporation (AGC)

3.0 – LOCATION

The project is located approximately 7.4 river miles south of the Nimbus Dam, along the north bank of the American River, within the Ancil Hoffman Park Golf Course (American River Designated Floodway [ARDF], Sacramento County; Figure 1, Attachment A).

4.0 – DESCRIPTION

The applicant proposes authorization of a groundwater extraction and treatment (GET) facility with an irrigation pump room, a trenched sewer pipe discharging treated groundwater into an HDPE pipe, and an associated outfall structure with rock slope protection on the right (north) bank of the ARDF (Figure 2, Attachment A).

5.0 – PROJECT ANALYSIS

Background and Existing Land Use

AGC has been required by a Record of Decision (ROD) by Region IX of the US EPA to construct this groundwater extraction and treatment (GET) system, and other GET systems throughout eastern Sacramento County, to remove and stop the movement of contaminated groundwater underneath the communities of Rancho Cordova, Eastern Sacramento, Gold River, and the southern portions of Fair Oaks and Carmichael.

This ROD required AGC to construct GET facilities as expeditiously as possible to prevent the continued spread of subsurface groundwater contamination, and in

timeframes that cannot always accommodate local and State permitting schedules. Due to the location of this particular GET facility it was necessary to begin construction at the beginning of the dry season in April of 2009.

The land use at the applicant's GET project site before and after construction is a public park and golf course operated, maintained and managed by the County of Sacramento Department of Parks and Recreation (Site Photographs, Attachment A).

Proposed Project Specifics

The proposed project includes the following features (Figure 1, Attachment C): paved vehicle access lanes, concrete driveway entrances, GET facility with irrigation pump room, a trenched sewer pipe discharging treated groundwater into an HDPE pipe, associated outfall structure with rock slope protection, and site re-landscaping to conform with the existing park and golf course setting.

5.1 – Hydraulic Analysis

The applicant contracted with Central Valley Environmental, Inc. (CVE) to perform hydraulic modeling of American River flood flows for the existing site condition, and for the existing plus GET facility condition. CVE used the US Army Corps of Engineers (USACE) HEC-RAS 4.1.0 one dimensional (1D) hydraulic model to generate flood flow simulations, and the American River Project Common Features May 2007 Report, which covered the reach of the American River from its mouth at the Sacramento River, River Mile (RM) 0, to just below the Nimbus Dam, RM 22, for cross section and flood flow data information.

The applicant's GET facility is located within the model's limits at RM 15.245 (Figure 2, Attachment C), and was modeled using site-specific cross sections. The modeled upstream and project area flood flow used was 160,000 cubic feet per second (cfs), changing to 172,000 cfs downstream based on original USACE model data.

The 1D hydraulic model results concluded there is very little change in the existing water surface elevation due to the GET facility. The largest change in water depth is approximately a decrease of 0.01 ft located at the HEC-RAS cross section for the GET facility (Figure 3, Attachment C). The GET facility improvements to the existing area did not increase the existing water surface elevation at other cross section model simulation locations.

It should be noted that the GET facility has been installed on existing high ground as determined by FEMA via the FIRM maps for the area within the Ancil Hoffman Park and Golf Course area, as depicted in Figure 4, Attachment C.

5.2 – Geotechnical Analysis

No geotechnical investigation was needed for this project because the applicant does not propose to alter any natural area watercourses nor install other flood control features within the ARDF as part of their proposed project.

5.3 – Additional Staff Analysis

Staff reviewed the permit application, hydraulic analysis, proposed site plan and field visited the site to evaluate the applicant's proposed project and its possible effects on the Adopted Plan of Flood Control. Upon consideration of the all of the above, it is this author's opinion that this project will not be injurious to the Adopted Plan of Flood Control.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- A 208.10 comment letter is not required from the U.S. Army Corps of Engineers because the project is in a designated floodway with no project levee or other project flood control facilities at or near the site. The proposed project is located inside of the American River Designated Floodway.
- There is no local maintaining agency for the project area. The American River Flood Control District jurisdiction ends approximately 1.75 miles upstream from the AGC GET facility.

7.0 – CEQA ANALYSIS

Board staff has prepared the following CEQA Findings:

The Board, as a Responsible Agency under CEQA, has reviewed the Initial Study/ Mitigated Negative Declaration (IS/MND) and Mitigation Monitoring Plan (SCH No. 2007022100, February 2007) for the Ancil Hoffman Groundwater Extraction and Treatment "L" System Project, prepared by the lead agency, Carmichael Water District. These documents, including project design and Carmichael Water District's resolutions, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvpfb.ca.gov/meetings/2010/8-26-2010agenda.cfm> under a link for this agenda item. The documents are also available for review in hard copy at the Board and County offices.

The Carmichael Water District determined that the project would not have a significant effect on the environment and adopted Resolution 04022007-1 and Mitigation

Monitoring Plan on April 2, 2007. Subsequently, the Notice of Determination was filed with the State Clearinghouse on April 4, 2007. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's Mitigation Monitoring Plan and address impacts to geology, hazardous materials, water quality, biological resources, and cultural resources. The description of the mitigation measures are further described in the adopted Mitigation Monitoring Plan.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

The project, a groundwater extraction and treatment (GET) facility should have only minimal effects on the State Plan of Flood Control.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Future events, changes in hydrology and climate may increase flows in the American River which in turn would increase the flood risk for the project.

9.0 – STAFF RECOMMENDATION

Staff recommends that the Board adopt the CEQA findings, approve the permit and direct staff to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

- A. Location Maps and Photos
- B. Permit No. 18483
- C. Additional attachments (Detailed plans, hydraulic figures)

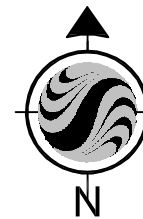
Design/Overall Review:	Jon Tice, P.E.
Environmental Review:	James Herota
Document Review:	Gary Lemon, P.E. / Len Marino, P.E.

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VICINITY MAP

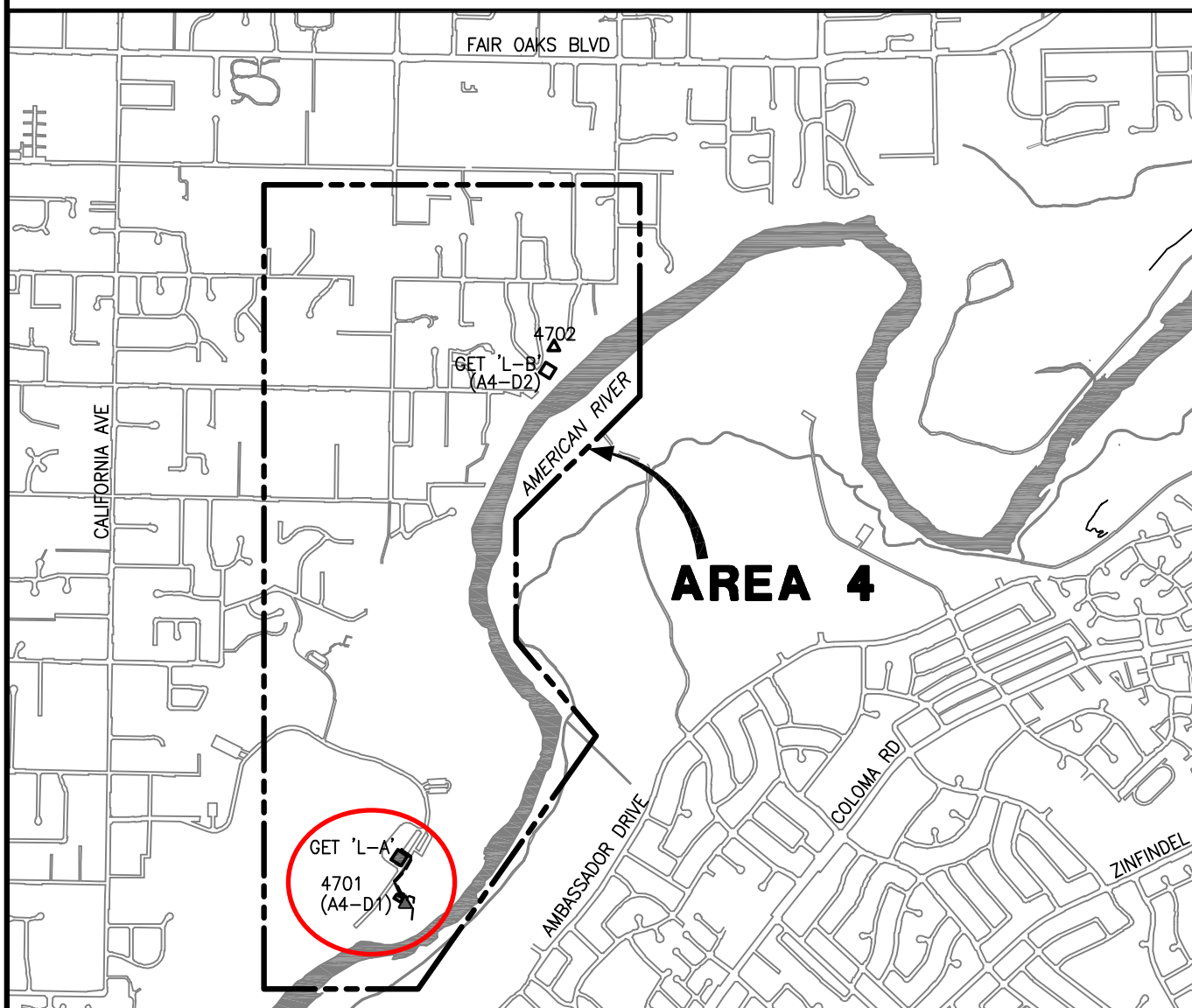


Figure 1,
Attachment A



SCALE: NTS

LOCATION MAP



GENCORP
AEROJET



SCALE: NTS

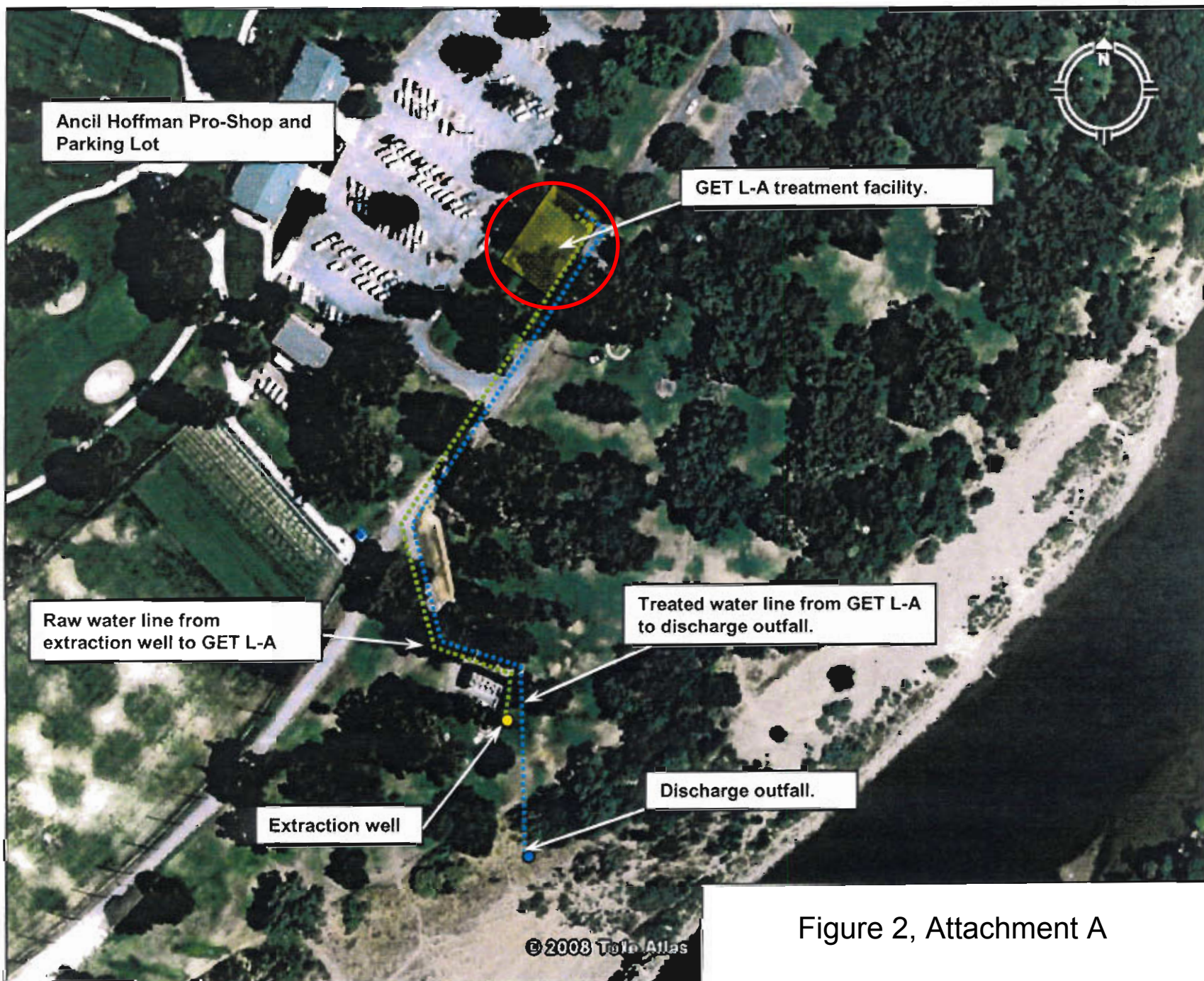


Figure 2, Attachment A



Photo No. 1,
Attachment A

05/13/2010

Looking East at GET Facility



Photo No. 2,
Attachment A

05/13/2010

Looking North at Extraction Well



Photo No. 3,
Attachment A

Looking South at Discharge Point

05/13/2010



Photo No. 4,
Attachment A

Looking North at Discharge Point

05/13/2010

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18483 BD

This Permit is issued to:

Aerojet-General Corporation
PO Box 13222, MS 5519
c/o Alan Jackson
Sacramento, California 95813

To authorize a 6,587-square-foot groundwater extraction and treatment facility and a 581-square-foot irrigation pump room within the American River designated floodway; with approximately 700 linear feet of trench with an 8 to 12-inch-diameter sewer pipe discharging into an 18-inch-diameter HDPE pipe; and an outfall structure on the right (north) bank of the American River with approximately 54 linear feet of rock slope protection. The project is located in Carmichael at 6700 Tarshes Drive (Section 27, T9N, R6E, MDB&M, American River, Sacramento County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18483 BD

THIRTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

FOURTEEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

FIFTEEN: The Central Valley Flood Protection Board and Department of Water Resources shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

SIXTEEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

SEVENTEEN: The permittee shall be responsible for repair of any damages to the American River Designated Floodway and other flood control facilities due to construction, operation, or maintenance of the proposed project.

EIGHTEEN: The permittee is responsible for all liability associated with construction, operation, and

maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion

NINETEEN: No construction work of any kind shall be done during the flood season from November 1st to April 15th without prior approval of the Central Valley Flood Protection Board.

TWENTY: All cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1st to April 15th.

TWENTY-ONE: Landscaping, appurtenances, and maintenance practices shall conform to standards contained in Section 131 of the Central Valley Flood Protection Board's Regulations, unless a variance thereto is specifically granted by the Central Valley Flood Protection Board.

TWENTY-TWO: Any vegetation which interferes with the successful execution, functioning, maintenance, or operation of the adopted plan of flood control must be removed by the owner at owner's expense upon request by the Central Valley Flood Protection Board, Department of Water Resources, or local maintaining agency. If the owner does not remove such vegetation upon request, the Central Valley Flood Protection Board reserves the right to remove the vegetation at the owner's expense.

TWENTY-THREE: The groundwater extraction and treatment building shall be properly anchored to prevent floatation into the floodway in the event of high water.

TWENTY-FOUR: The pipelines shall be tested and confirmed free of leaks by X-ray, pressure tests, or other approved methods anytime after construction upon request by the Central Valley Flood Protection Board.

TWENTY-FIVE: The waterward end of the discharge pipe shall be constructed to direct the flow away from the bank to prevent erosion.

TWENTY-SIX: A positive-closure device that is readily accessible during periods of high water shall be installed on the waterward side of the discharge pipe.

TWENTY-SEVEN: The permittee is responsible for repairing any damage to the designated floodway caused by the installation or operation of the groundwater extraction and treatment facility and/or associated pipelines.

TWENTY-EIGHT: The permittee acknowledges that the groundwater extraction and treatment building is located within the American River designated floodway and is subject to periodic flooding.

TWENTY-NINE: Debris that may accumulate on the permitted encroachment(s) and related facilities shall be cleared off and disposed of outside the floodway after each period of high water.

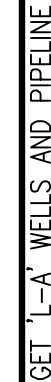
THIRTY: The work area shall be restored to the condition that existed prior to start of work.

THIRTY-ONE: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Inspection Section upon completion of the project.

THIRTY-TWO: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

THIRTY-THREE: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

THIRTY-FOUR: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.



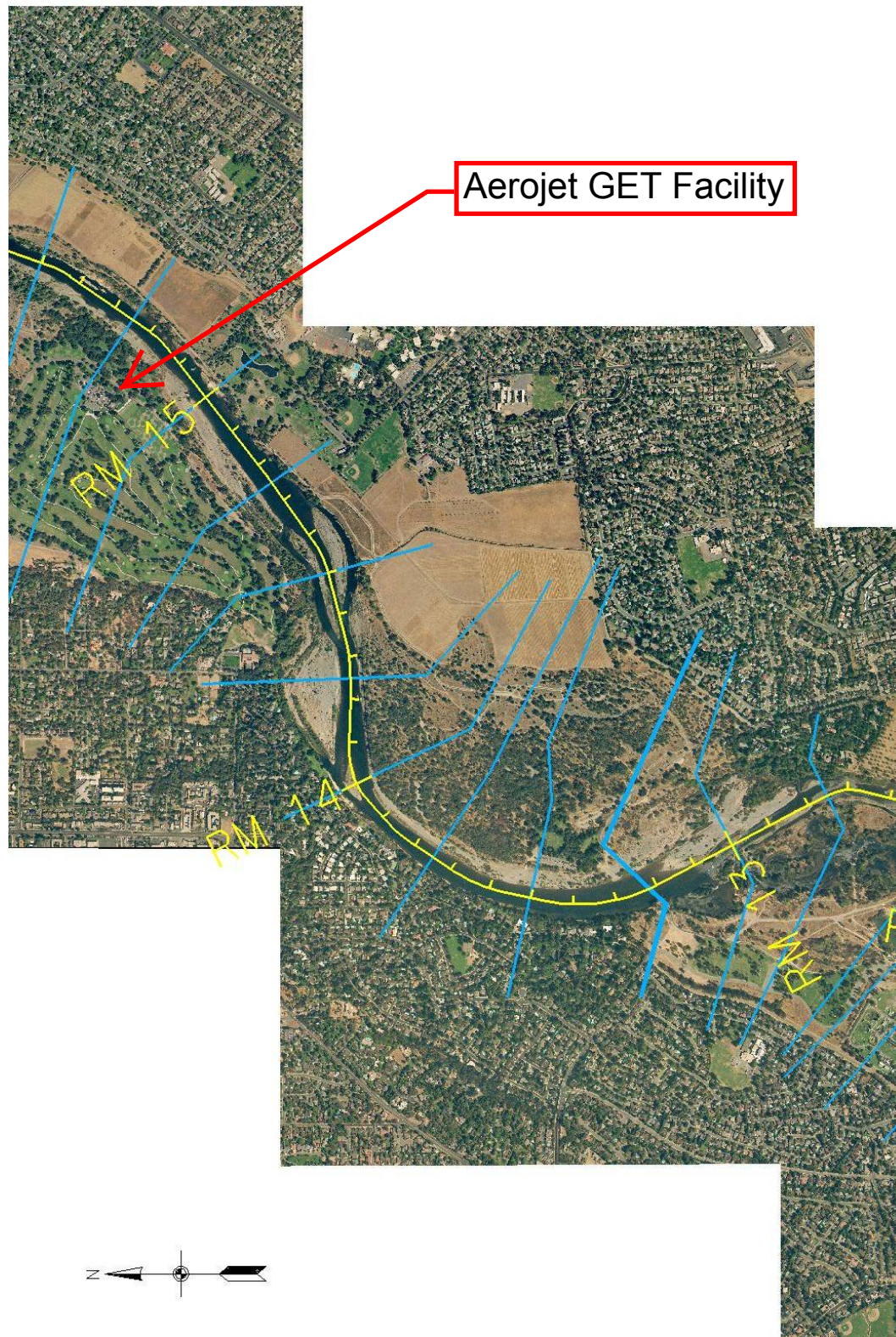
WDID NO. <u>5S34L900007</u>	
SWPPP IMPLEMENTATION REPRESENTATIVE	
NAME	PHONE

CONSTRUCTION PHASE	EROSION AND SEDIMENT CONTROL MEASURES										
	WET SEASON				WET & DRY SEASON						
	HYDROSEEDING	STRAW MULCHING & TACIFIER	SOIL BINDER	BLANKETS, MATS & GEOTEXTILES	FIBER ROLLS	DUST CONTROL	SAND/GRAVEL BAG BARRIERS	DEWATERING	STABILIZED CONSTRUCTION ENTRANCE	MATERIAL & WASTE DISPOSAL LOCATION	CONCRETE WASHOUT
PRE-GRADING					●	●	●		●	●	●
CUT & FILL ACTIVITIES	●	●	●	●	●	●		●			●
UNDERGROUND WORK								●			
ROAD IMPROVEMENTS					●		●				
PAVE OUT					●						
POST CONSTRUCTION	●	●	●								

SSMH
INV 6" (S) IN ELEV=67.22
INV 6" (N) OUT ELEV=67.2

52842\active\84200335\sfe_2003\civil\drawing\improvements_plans\c-401-c5.dwg 1/20/09 12:19pm gousick

Figure 2, Attachment C:
American River HEC-RAS cross sections River Mile 12.75 to 15.25

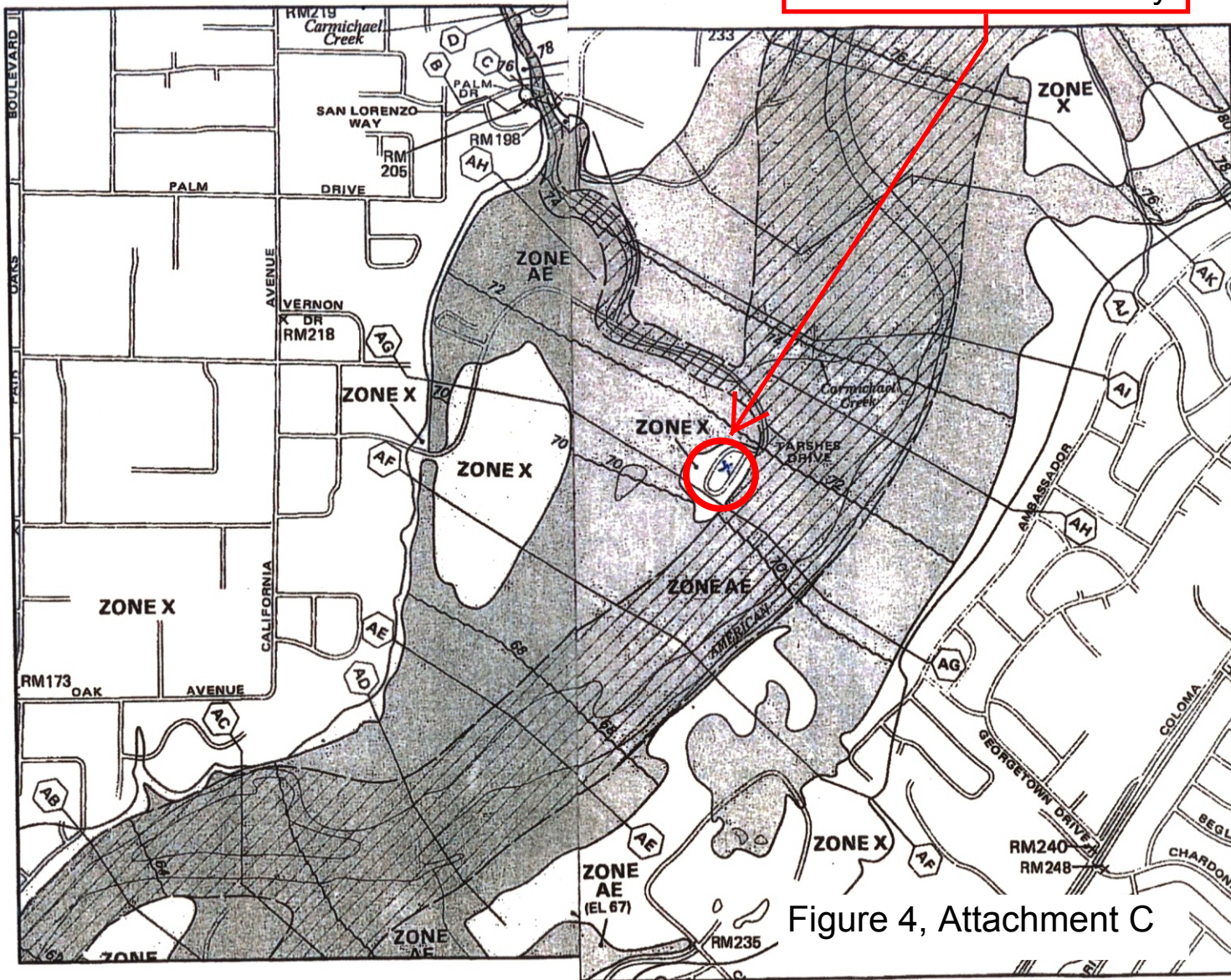


**HEC-RAS Modeling Summary Table
Aerojet GET L-A Groundwater Treatment Facility
CVFPB Permit No. 18483**

X-Section No.	Distance from Project (ft)	Water Surface Elevations (ft)			Comments
		Without Project	With Project	Change	
15.500	1360	72.90	72.90	0.00	Upstream of Treatment Facility
15.250	40	70.08	70.08	0.00	Upstream of Treatment Facility
15.245	0	70.01	70.00	- 0.01	X-Section at Treatment Facility
15.230	40	69.77	69.77	0.00	Downstream end of Treatment Facility
15.000	1160	68.65	68.65	0.00	Downstream of Treatment Facility

Figure 3, Attachment C

Location of GET Facility



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SACRAMENTO
COUNTY,
CALIFORNIA
(UNINCORPORATED AREAS)

PANEL 210 OF 705
(SEE MAP INDEX FOR PANELS NOT PRINTED)



COMMUNITY-PANEL NUMBER
060262 0210 E

MAP REVISED:
JULY 6, 1998



Federal Emergency Management Agency

Figure 4, Attachment C

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.fema.gov